

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

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Date of mailing (day/month/year)

03 February 1999 (03.02.99)

International application No.

PCT/US98/03194

Applicant's or agent's file reference

FORS-03345

International filing date (day/month/year)

05 May 1998 (05.05.98)

Priority date (day/month/year)

05 May 1997 (05.05.97)

Applicant

DONG, Fang et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

04 December 1998 (04.12.98)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

A. Karkachi

Telephone No.: (41-22) 338.83.38

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AA979(F9822)	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP98/01885	International filing date (day/month/year) 23 April 1998 (23.04.1998)	Priority date (day/month/year) 24 April 1997 (24.04.1997)
International Patent Classification (IPC) or national classification and IPC C08G 77/385, 77/24, C07F 7/12		
Applicant ASAHI GLASS COMPANY LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.
<input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>

Date of submission of the demand 22 October 1998 (22.10.1998)	Date of completion of this report 23 March 1999 (23.03.1999)
Name and mailing address of the IPEA/JP Japanese Patent Office, 4-3 Kasumigaseki 3-chome Chiyoda-ku, Tokyo 100-8915, Japan Facsimile No.	Authorized officer  Telephone No. (81-3) 3581 1101

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP98/01885

## I. Basis of the report

1. With regard to the **elements** of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP98/01885

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

### 2. Citations and explanations

None of the documents cited in the ISR describes the process for the preparation of fluorosilicone compounds having hydrolyzable groups in claims 1 through 10, nor is it obvious to a party skilled in the art.

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International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>C07H 21/04, 21/02, C12Q 1/68</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 98/50403</b> <b>(43) International Publication Date:</b> 12 November 1998 (12.11.98)
<b>(21) International Application Number:</b> PCT/US98/03194 <b>(22) International Filing Date:</b> 5 May 1998 (05.05.98)  <b>(30) Priority Data:</b> 08/851,588 5 May 1997 (05.05.97) US 08/934,097 19 September 1997 (19.09.97) US 09/034,205 3 March 1998 (03.03.98) US  <b>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application</b> US 09/034,205 (CIP) Filed on 3 March 1998 (03.03.98)  <b>(71) Applicant (for all designated States except US):</b> THIRD WAVE TECHNOLOGIES, INC. [US/US]; 2800 South Fish Hatchery Road, Madison, WI 53711 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> DONG, Fang [CN/US]; 203 Eagle Heights, Madison, WI 53705 (US). LYAMICHEV, Victor I. [RU/US]; 2523 Carriedale Court, Madison, WI 53711 (US). PRUDENT, James, R. [US/US]; 3750 Country Grove Drive, Madison, WI 53719 (US). FORS, Lance [US/US]; 12 Hidden Hollow Trace,	<p>Madison, WI 53717 (US). NERI, Bruce, P. [US/US]; 5714 Kilkenny Place, Madison, WI 53711 (US). BROW, Mary, Ann, D. [US/US]; 5905 Hammersley Road, Madison, WI 53711 (US). ANDERSON, Todd, A. [US/US]; 2302 University Avenue #323, Madison, WI 53705 (US). DAHLBERG, James, E. [US/US]; 1119 Merrill Springs Road, Madison, WI 53705-1316 (US).</p> <p><b>(74) Agents:</b> CARROLL, Peter, G. et al.; Medlen &amp; Carroll, LLP, Suite 2200, 220 Montgomery Street, San Francisco, CA 94104 (US).</p> <p><b>(81) Designated States:</b> AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>	
<b>(54) Title:</b> TARGET-DEPENDENT REACTIONS USING STRUCTURE-BRIDGING OLIGONUCLEOTIDES  <b>(57) Abstract</b>  The present invention relates to methods and compositions for analyzing nucleic acids. In particular, the present invention provides methods and compositions for the detection and characterization of nucleic acid sequences and sequence changes. The methods of the present invention permit the detection and/or identification of genetic polymorphism such as those associated with human disease and permit the identification of pathogens (e.g., viral and bacterial strain identification).		

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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/03194

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :C07H 21/04, 21/02; C12Q 1/68  
US CL :435/6; 536/23.1, 24.3, 24.31, 24.32

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/6; 536/23.1, 24.3, 24.31, 24.32

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
APS MEDLINE BIOSIS SCISEARCH EMBASE CAPLUS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LIMA W., et al., Implication of RNA Structure on Antisense Oligonucleotide Hybridization Kinetics. Biochemistry 1992. Vol. 31, pages 12055-12061, see entire document.	1-89
Y	ZARRINKAR, P., et al., The Kinetic Folding Pathway of the Tetrahmena Ribozyme Reveals Possible Similarities Between RNA and Protein Folding. Nature Structural Biology. May 1996, Vol. 3, No. 5, pages 432-438, see entire document.	1-89
Y	ZARRINKAR, P., et al., Kinetic Intermediates in RNA Folding. Science. 12 August 1994. Vol. 265, pages 918-924, see entire document.	1-89

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

24 JULY 1998

Date of mailing of the international search report

08 SEP 1998

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/03194

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	FEDEROVA, O., et al., The Influence of the Target Structure on the Efficiency of Alkylation of Single Stranded DNA with the Reactive Derivatives of Antisense Oligonucleotides. FEBS. May 1992. Vol. 302, No. 1, pages 47-40, see entire document.	1-4, 12 ----- 5-11, 13-27
X --- Y	GAMPER, H., et al., Solution Hybridization of Crosslinkable DNA Oligonucleotides to Bacteriophage M13 DNA. J. Mol. Biol. 1987. Vol. 197, pages 349-362, see entire document.	1-4, 12, 28-32, 40, 81, 82 ----- 5-11, 13-27, 33- 39, 41-66
X --- Y	SOUTHERN, E., Detection of Specific Sequences Among DNA Fragments Separated by Gel Electrophoresis. J. Mol. Biol. 1975. Vol. 98, pages 503-517, see entire document.	1-4, 12, 14 ----- 5-13, 15-27



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(54) Title: TARGET-DEPENDENT REACTIONS USING STRUCTURE-BRIDGING OLIGONUCLEOTIDES			
(57) Abstract			
<p>The present invention relates to methods and compositions for analyzing nucleic acids. In particular, the present invention provides methods and compositions for the detection and characterization of nucleic acid sequences and sequence changes. The methods of the present invention permit the detection and/or identification of genetic polymorphism such as those associated with human disease and permit the identification of pathogens (e.g., viral and bacterial strain identification).</p>			